RUSLE RELATED ATTRIBUTES

Data attributes for the Revised Universal Soil Loss Equation (RUSLE) are contained in the table RUSLE Related Attributes. The RUSLE equation uses the hydrologic soil group, the soil loss tolerance (T) values, the susceptibility of the soil to water erosion (Kw), and the percent sand, silt, and clay of the surface horizon. The T value represents the maximum annual rate of soil erosion that could take place without causing a decline in long-term productivity. A soil map unit with an erodibility index of 8 or more is a highly erodible soil map unit.

The Hydrologic Soil Group, designated A, B, C, and D, is a group of soils having the same runoff potential under similar cover and storm conditions. Soil properties that influence runoff potential are those that influence the minimum rate of infiltration for a bare soil after prolonged wetting and when not frozen. These properties are depth to seasonally high water table, intake rate, and permeability after prolonged wetting, and depth to very slowly permeable layer. The influence of ground cover is treated independently – not in hydrologic soil groups.

Definitions

Infiltration rate: the rate at which water enters the soil at the surface and is controlled by surface conditions.

Transmission rate: the rate at which water moves in the soil and which is controlled by the horizons.

Hydrologic Group Definitions

Group A
Soils having high infiltration rates, even when thoroughly wetted and consisting chiefly of deep, well-drained- to excessively drained sands or gravels, and have a high rate of water transmission (low runoff potential).

Group B
Soils having moderate infiltration rates when thoroughly wetted and consisting chiefly of moderately deep to deep, moderately well drained to well drained soils that have moderately fine to moderately coarse textures, and have a moderate rate of water transmission.

Group C
Soils having slow infiltration rates when thoroughly wetted, consisting chiefly of a layer that impedes downward movement of water or soils with moderately fine to fine texture, and have a slow rate of water transmission.

Group D
Soils having very slow infiltration rates when thoroughly wetted, consisting chiefly of clay soils that have a high swelling potential, soils that have a permanent high water table, soils that have a claypan or clay layer at or near the surface, and shallow soils over nearly impervious material. They have a very slow rate of water transmission (high runoff potential).